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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/030,870	10/19/2001	Robert Boesnecker	32860-000181	8899
30596 7590 09/28/2010 HARNESS, DICKEY & PIERCE, P.L.C. P.O.BOX 8910 RESTON, VA 20195				
EXAMINER FAULK, DEVONAE				
ART UNIT 2614		PAPER NUMBER		
NOTIFICATION DATE 09/28/2010		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

**Application No.**

10/030,870

**Applicant(s)**

BOESNECKER, ROBERT

**Examiner**

DEVONA E. FAULK

**Art Unit**

2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 July 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 3,6,7 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3,6,7 and 13-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ ~~Notes of Informal Patent Application~~
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114 was filed in this application after a decision by the Board of Patent Appeals and Interferences, but before the filing of a Notice of Appeal to the Court of Appeals for the Federal Circuit or the commencement of a civil action. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 7/7/10 has been entered.

***Response to Arguments***

2. Applicant's arguments filed 7/7/10 have been fully considered but they are not persuasive.
3. Regarding claim 13, the applicant asserts that the prior art does not teach of an individual flat surface loudspeaker optimized for a respective application. The examiner disagrees. Makivirta as modified by Azima teach of a flat surface loudspeaker optimized for a respective application. Makivirta teaches of a one way speaker for sound reproduction system and Azima teaches of a flat surface loudspeaker. Loudspeakers output sound and so implicitly they are optimized for some particular application that needs to output sound.
4. Claims 1,2,4,5,8-12 are cancelled.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 14,15 ARE rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 14 recites " " at least for each object type" and claim 15 recites " ...electroacoustic transfer function is defined for each arrangement of the flat surface loudspeaker". The examiner is unclear as to what is meant by each object type and each arrangement. Claim 13 does not mention anything about multiple arrangements. Clarity is needed.
7. Claim 14 recites the limitation " at least for each object type" in line 2.
8. Claim 15 recites the limitation " ...electroacoustic transfer function is defined for each arrangement of the flat surface loudspeaker".
9. Claim 17 recites the limitation " relating to the respective application..".
10. Claims 18-21 recite "...surface plate..".
11. There is insufficient antecedent basis for this limitation in the claim, particularly for "each object", "each arrangement", " the respective application" and " surface plate".

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3,6,7,12,16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makivirta et al. (EP 0567 061) in view of Azima et al. (US Patent 6,198,831).

14. Regarding **claim 13**, Makivirta discloses a method for designing an individual loudspeaker optimized for a respective application (Makivirta teaches of a one way speaker for sound reproduction system) comprising:

measuring the acoustic frequency response of the loudspeaker (64, filter/correlator, column 5, lines 25-26).

determining a frequency curve based on the measured acoustic frequency response (4, wideband filter, column 5, lines 16-);

determining an inverse frequency curve to the frequency curve (column 1, lines 50-55; column 5, lines 16-26);

providing the inverse frequency curve in a filter device as a transfer function of the filter device (column 5, lines 16-26);

and in an operating mode, compensating for the frequency response of the loudspeaker by the filter device, which is connected between the sound source and the loudspeaker based upon the transfer function (Figure 2B; column 3, lines 15-24)).

Makivirta discloses that the speaker is a one-way loudspeaker but fails to disclose that the loudspeaker is an individual flat surface loudspeaker optimized for a respective application including at least one oscillating coil and a surface.

Azima discloses an individual flat surface loudspeaker optimized for a respective application including at least one oscillating coil and a surface. Azima teaches of a flat-panel loudspeaker, in which at least one oscillating coil (9 transducer) is mounted on a surface in the form of a plate (sound radiating panel) having predetermined characteristics (Figure 3, obvious that the plate has some predetermined characteristics), comprising: stimulating at least one coil to oscillate electrically by a sound source (column 5, lines 15-17) and emitting sound by the surface stimulated to oscillate mechanically by the oscillating coil. Loudspeakers output sound and so implicitly they are optimized for some particular application that needs to output sound

It would have been obvious to modify Makivirta's method of correcting by using a flat panel loudspeaker as the one-way loudspeaker in order to Azima to produce a more superior output over that of a conventional speaker (Azima, column 4, lines 61-62).

Regarding **claim 22**, Makivirta discloses a loudspeaker and a filter device for the sound signals, connected upstream of the at least one oscillation coil, wherein a transfer function of the filter device is the inverse of a frequency response of the loudspeaker ((column 5, lines 16-26; Figure 2B; column 3, lines 15-24)) and the filter device is in the form of a digital filter equipped with a freely programmable digital signal processor programmed to implement a desired transfer function (column 5, lines 4-20; this reads on program for simulating the transfer function).

Makivirta discloses that the speaker is a one-way loudspeaker .

Makivirta fails to disclose that the loudspeaker is a flat panel loudspeaker and that the digital signal processor includes a program for storing a respective algorithm for which the flat surface loudspeaker is optimized.

Azima discloses a one-way loudspeaker, a flat-panel loudspeaker, in which at least one oscillating coil (9 transducer) is mounted on a surface in the form of a plate (sound radiating panel) having predetermined characteristics (Figure 3, obvious that the plate has some predetermined characteristics), comprising: stimulating at least one coil to oscillate electrically by a sound source (column 5, lines 15-17) and emitting sound by the surface stimulated to oscillate mechanically by the oscillating coil.

It would have been obvious to modify Makivirta's method of correcting by using a flat panel loudspeaker as the one-way loudspeaker in order to Azima to produce a more superior output over that of a conventional speaker (Azima, column 4, lines 61-62).

Regarding the digital signal processor including a program for storing a respective algorithm for which the flat surface loudspeaker is optimized, the examiner asserts that it is well known in the art to have digital signal processors include programs and/or algorithms that perform or simulate a desired function. It would have been obvious to modify Makivirta as modified so that the digital signal processor includes a program for storing a respective algorithm for which the flat surface loudspeaker is optimized in order to permit faster processing.

**Regarding claim 3**, Makivirta as modified by Azima discloses wherein the transfer function is formed by FIR (finite impulse response) filters, whose filter coefficients are derived from the inverse frequency curve (Makivirta, column 5, lines 20-

25). It is implicit that the coefficients are derived as claimed. All elements of claim 3 are comprehended by the rejection of claim 2.

All elements of **claim 6** are comprehended by the rejection of claim 22.

Regarding **claims 16 and 17**, Makivirta as modified discloses wherein the transfer function of the filter device is stored in a data memory of a free programmable digital signal processor (column 5, lines 4-20; Figure 2B; this reads on program for simulating the transfer function) and wherein a specific transfer function relates to an application stored in data memory (implicit; a DSP is a specialized microprocessor and all microprocessors have memory).

All elements of claims **18,20 and 21** are comprehended by the rejection of claim 13 (implicit that some material and shape is selected for the plate with respect to the application; the oscillation coil's position is not dependent upon the shape of the plate; Makivirta as modified by Azima teaches of a flat surface loudspeaker optimized for a respective application. Makivirta teaches of a one way speaker for sound reproduction system and Azima teaches of a flat surface loudspeaker. Loudspeakers output sound and so implicitly they are optimized for some particular application that needs to output sound).

All elements of **claim 19** are comprehended by the rejection of claim 13 and 18 (Azima, column 3, lines 10-19).



5. **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over Makivirta et al. (EP 0567 061) as applied to claim 4 above and Azima et al. (US Patent 6,198,831) as applied to claim 4 above in view of Smith (GB 2 265 519 A).

Regarding **claim 7**, Makivirta as modified by Azima fails to disclose that the filter device includes a sample and hold element connected via an analogue-to-digital converter to the digital filter, whose output is connected to a digital-to-analogue converter. Smith teaches of compensating for the non-linear responses of a flat panel loudspeaker including a D/A and an A/D converter connected to a filtering means (digital format converter, Figure 5), a re-linearising device (Figures 5 and 6) and a memory (sample and hold element) connected as claimed (page 4, lines 8—19). It would have been obvious to modify Makivirta as modified by having the filter include a sample and hold element in order to re-scale the input signal in order to a displacement which is proportional to the input signal.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DEVONA E. FAULK whose telephone number is (571)272-7515. The examiner can normally be reached on 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devona E. Faulk/  
Primary Examiner, Art Unit 2614